

# **Report for 2001CO261G: Use of Low-Cost Data to Simulate Fractured-Aquifer Watersheds for Management of Water Quality and Quantity**

- Book Chapters:
  - Poeter, E., G. Thyne, G. VanderBeek, and C. Güler, 2003, Ground water in the Turkey Creek Basin of the Rocky Mountain Front Range in Colorado, in press in Engineering Geology in Colorado: Contributions, Trends, and Case Histories, ed. Douglas Boyer, Paul Santi, and Pat Rogers, Association of Engineering Geologists Special Publication 15 and Colorado Geological Survey Special Publication 55.
- Conference Proceedings:
  - Poeter, E., G. Thyne, J. McCray, J. Lee and G. VanderBeek, 2002, Low-Cost Data for Characterization and Management of Fractured-Crystalline Aquifers, Proceedings of Fractured Rock Aquifers 2002, National Ground Water Association.
- Other Publications:
  - Day, S., G. Thyne and E. Poeter, 2003, Using statistical analyses to characterize effects of population growth on water quality, Geol. Soc. Amer., Abstracts with Programs, 35(5), p. 30.
  - Thyne, G., S. Day, J.E. McCray, and E. Poeter, 2002, Evaluation of the effects of population growth in mountain watershed water quality, EPA Fractured Rock Aquifers 2002 Focus Conference, Denver, Colorado.
  - Wellman, Tristan and Eileen Poeter, 2004 in press, Optimizing the Predictive Accuracy of Hydraulic Head Observations to Delineate Continuum Scales in Phreatic Fractured Rock Aquifers, The Finite-Element Models, MODFLOW, and More 2004 conference, Carlsbad, Czech Republic.
  - Wellman, T. and E. Poeter, 2004, Evaluating Hydraulic Head Data as an Estimator for Spatially Variable Equivalent Continuum Scales in Fractured Architecture Using Discrete Feature Analysis, Dynamics of Fluids in Fractured Rock Conference, Sponsored by Lawrence Berkeley National Laboratory, February.
  - VanderBeek, G., Poeter, E.P., Thyne, G.D., and McCray, J.E., 2003. Ground-water availability in Turkey Creek Basin, Colorado, Geol. Soc. Amer., Abstracts with Programs, 35(5).
  - Dano, K., Poeter, E. and Thyne G., 2002, Geochemical and geophysical determination of the fate of septic tank effluent in a mountain watershed. Colorado. Geol. Soc. Am. Abstracts with Programs, 34(6).
  - VanderBeek G, Poeter E, Thyne G, McCray J.E., 2002, Ground-water Availability in Turkey Creek Basin, CO. GSA Abstracts with Programs, 33(4).
- Articles in Refereed Scientific Journals:
  - Wellman, Tristan and Eileen Poeter, 2004, Estimating Spatially Variable Representative Elementary Scales in Fractured Architecture Using Hydraulic Head Observations, in review at Water Resources Research.
- unclassified:
  - Day, S., G. Thyne, E. Poeter, and J.E. McCray, 2002, Effects of population growth on water quality in a mountain watershed, Geol. Soc. Amer. Abstracts with Programs, 34(6).
  - Day, Sharon, Geoff Thyne, John McCray, and Eileen Poeter, 2002, Evaluation of the effects of population growth on water quality in a mountainous watershed, Geol. Soc. Amer. Abstracts

with Programs, 33(4).

- Guler, C., and G. Thyne, 2002, Hydrochemical evolution model and characterization of flow in a fractured crystalline rock aquifer, Turkey Creek, Colorado, Geol. Soc. Amer. Abstracts with Programs, 34(6).
- VanderBeek, Greg and Eileen Poeter, 2004, Water Resource Evaluation in Fractured Rock Aquifers Using Low-Cost Data, in preparation for Ground Water.
- Thyne, G. D., C. Guler, and Poeter, E., 2004, in press for Ground Water Sequential Analysis of Hydrochemical Data for Watershed Characterization, Ground Water.
- Wellman, TP and EP Poeter, 2003, Estimating Equivalent Continuum Scales in Fractured Aquifer Watersheds Using Discrete Feature Network Simulation, Fall AGU Meeting, Eos, 84 (46) abstract H42B-1071.

Report Follows

This project was begun in December-January because of the delay in processing the grant; therefore, no research results are yet available.